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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/733,361  | 12/12/2003  | Kenji Yamagata       | 00862.023377        | 8701             |
| 5514  | 7590        | 01/19/2006           | EXAMINER            |                  |
| FITZPATRICK CELLA HARPER & SCINTO<br>30 ROCKEFELLER PLAZA<br>NEW YORK, NY 10112 |             |                      | MACARTHUR, SYLVIA   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1763                |                  |

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/733,361

Applicant(s)

YAMAGATA ET AL.

Examiner

Sylvia R. MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 11-13 and 17-32 is/are pending in the application.
- 4a) Of the above claim(s) 17-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/17/2005 + 10/7/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Okuda et al US (2002/0035762).

Okuda et al teaches a substrate processing apparatus.

Re Claim 1: Okuda et al teaches a process container (inherently present according to element 1045), a holding mechanism 1005, an oscillation source (see section 0357 and eleemebt 3067/3093) which is arranged parallel to the surface of the holding mechanism, and a structure (motor 1013) to rotate the substrate held by a holding mechanism. Okuda et al further teaches discharge portion 1012 and 1025. The discharge portions are provided with drive mechanisms according to [0199]. Figs. 14 and 18 illustrate reciprocal movement of the nozzles.

Re Claims 2 and 3: The rotary mechanism 6 transmits a rotating force to the substrate by a solid member, see Fig. 1.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-6 are rejected under 35 U.S.C 103(a) as being unpatentable over Okuda in view of Kume.

The teachings of Okuda et al were discussed above.

Okuda et al fails to teach rotating the substrate by forming a flow of process solution.

Kume teaches Kume teaches an apparatus and method of cleaning a substrate.

Kume teaches a process container 1, a holding mechanism 5, an oscillation source 3 which is arranged parallel to the surface of the holding mechanism, and a structure 6 to rotate the substrate held by a holding mechanism. The rotary mechanism 6 transmits a rotating force to the substrate by a solid member, see Fig. 3. To rotate the substrate the holding mechanism 5 is rotated, see Fig. 3.

Regarding claims 4 and 5: Kume teaches flow of processing solution is formed to rotate the structure see col. 4 lines 55-65. The motivation to introduce the apparatus of Okuda et al into the processing container of Kume is that the combined teachings of the two apparatus provide a more uniform rotation and treatment of the substrate by allowing rotation from two means the spinning of the holding mechanism and the flow of the process fluid. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to combine the teachings of Kume and Okuda et al.

Re Claim 6: Okuda et al teaches a supply portions 1025 and 1012.

9. Claims 7,8 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda in view of Kiyobumi (JP 2000-133632).

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The teachings of Okuda et al were discussed above.

Okuda fails to teach removing bubbles.

Kiyobumi teaches desecration treatment during processing.

Regarding claims 7 and 11 A circulation line 108 (discharge portion) is provided with a deaerator 110 in the middle of the line 108. The English Translation of the patent cites that the deaerator removes dissolved gas (in the form of bubbles)

Regarding 8: Figure 1 illustrates that the discharge portion is configured to discharge the process solution to local region in the surface of the substrate.

The motivation to provide the discharge portion and deaerator of Kiyobumi in the apparatus of Okuda et al is to suppress the generation of bubbles in-situ.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide the discharge portion with a deaerator.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-8 and 11-13 have been considered but are moot in view of the new ground(s) of rejection. The apparatus of Okuda et al teaches the oscillation source in parallel to the surface of the substrate as the amended claim 1 recites.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sylvia R MacArthur

Patent Examiner

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December 27, 2005